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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,145	11/15/2000	Jong Heon Kim	K-234	8568

7590 06/09/2004
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14500 Avion Parkway
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Chantilly, VA 20151

EXAMINER

LUGO, DAVID B

ART UNIT PAPER NUMBER

2634

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/712,145

Applicant(s)

KIM, JONG HEON

Examiner

David B. Lugo

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 1-10) in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the search and examination of the application can be made without serious burden. This is not found persuasive, as the text searches for each of the distinct inventions are divergent. The additional search and examination are thus considered to be burdensome.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 11-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the multiplying of the signals input to each of the MUXs in response to the control signals, recited in claim 3, line 9, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:
- a. Page 8, equation 5, the range for the values of i in the first term of $r_{i,m+2}$ should be: " $1 < i \leq n$ ", as the case for $i=1$ is accounted for in the second term (e.g., see claim 8).
 - b. The description in page 12, lines 3-7, do not correspond with equation 4 (see page 7), as it appears that the recitation of an "AND operated value of output value of fourth shift register 14 with an output value of the second shift register" is describing the term in parentheses in equation 4 ($r_{n,m} g_{i-1}$), which shows an AND operation between the output value of the n th (or fourth) shift register with the **second value of the generation polynomial**, (i.e. $i-1$), and not the "output value of the **second shift register**" as recited in lines 6-7 of page 12. If this is the case, appropriate correction is required.
 - c. Page 12, line 9, the phrase "AND operation of a value of AND operation of second value" should be revised as it appears to be redundant. It is suggested that it be changed to "AND operation of a second value".
6. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

7. Claims 1-10 are objected to because of the following informalities:
- a. Claim 1, line 2, "the normal state" should be --a normal state--.
 - b. Claim 1, line 3, "the next state" should be --a next state--.
 - c. Claim 1, line 5, "the next or the second" should be --the next or second--.

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- d. Claim 1, line 6, "the input end" should be --an input end--.
- e. Claim 1, line 7, "the output end of each of said MUXs" should be --an output end of a corresponding one of said MUXs--.
- f. Claim 2, line 2, "MUXs further outputs" should be --MUXs further output--.
- g. Claim 3, line 3, "the output end" should be --an output end--.
- h. Claim 3, line 3, "to input end of" should be --to an input end of a corresponding one of--.
- i. Claim 3, line 5, "inputting signals" should be --inputting control signals--.
- j. Claim 3, lines 5-6, "the next state of the LSSR in the normal state" should be --a next state of the LSSR in a normal state--.
- k. Claim 3, line 6, "the next state of the LSSR for a PN chip advance" should be --a next state of the LSSR for a PN chip advance--.
- l. Claim 3, line 8, "changing the next state in respect to the LSSR" is unclear and should be revised.
- m. Claim 3, line 10, "one clock" should be --one clock cycle--.
- n. Claim 4, line 3, "(n-1)th shift register" should be --an (n-1)th shift register--.
- o. Claim 4, line 4, "nth shift register" should be --an nth shift register--.
- p. Claim 4, line 4, "(n-1)th value of generation" should be --an (n-1)th value of a generation--.
- q. Claim 4, line 5, "first shift register" should be --a first shift register--.
- r. Claim 4, line 8, "random ith shift register" should be --a random ith shift register--.

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- s. Claim 4, line 9, it appears that "OR operating" should be --AND operating-- to correspond with the last term in the first line of the definition of $r_{i,m+2}$ in equation 5 (p. 8).
- t. Claim 4, line 9, "(i-1)th shift register of generation polynomial" should be --an (i-1)th value of the generation polynomial--.
- u. Claim 4, line 11, "(n-1)th value" should be --the (n-1)th value--.
- v. Claim 4, line 12, "(i-2)th" should be --an (i-2)th--.
- w. Claim 4, line 13, "(i-2)th retard device" should be --an (i-2)th shift register--.
- x. Claim 5, lines 1-2, "the PN chip retard" should be --a PN chip retard--.
- y. Claim 5, line 2, "to disable" should be --by disabling--.
- z. Claim 6, line 2, "nth order generation polynomial" should be --an nth order generation polynomial--.
- aa. Claim 7, line 1, "the present state" should be --a present state--.
- bb. Claim 7, line 7, for the term r_{m+1} , the components " $r_{n,m} r_{n-1,m} \dots r_{1,m} r_{0,m}$ " should be -- $r_{n,m+1} r_{n-1,m+1} \dots r_{1,m+1} r_{0,m+1}$ -- ("m" should be --m+1--; see equation 3, page 7).
- cc. Claim 9, line 2, "the next state of the LSSR for the PN chip retard" should be --a next state of the LSSR for a PN chip retard--.
- dd. Claim 10, lines 2-3, "the ith shift register to the input end" should be --an ith shift register to an input end--.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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9. Claims 3-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

10. Claim 3 recites "multiplying signals input to each of the MUXs in response to the control signals" in line 9. This limitation is not sufficiently described in the specification, as it does not appear from the specification that signals input to each of the MUXs are multiplied as claimed, and hence it is not enabling to a person of ordinary skill in the art. Applicant is kindly requested to point out where in the detailed description this limitation is described.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Kelem U.S. Patent 6,061,417.

13. Kelem discloses a PN code generator in Fig. 5, comprising a plurality of MUXs connected to a plurality of shift registers for outputting codes during one system clock time period in response to the MUXs, where an input end of each shift register is connected to an output of a corresponding MUX, and where a control signal (UP/DOWN), inherently supplied by a control unit, is used to control the MUXs for a normal state (count down mode) or a chip advance (count-up mode) (see col. 4, lines 4-33).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelem in view of Gruodis et al. U.S. Patent 5,412,665.

16. Kelem discloses an apparatus for generating PN codes as described above, where each of a plurality of multiplexers are connected to an input of a corresponding shift register for providing signals for normal operation or for a PN chip advance of the PN code generator.

17. Kelem does not disclose that a control signal is output for a PN chip retard, wherein the MUXs further output a value for a PN chip retard.

18. Gruodis et al. disclose a code generator including a linear feedback shift register in Figure 2 where the outputs of multiplexers are connected to respective inputs of shift registers for providing a signal from the "1" input of the multiplexer for normal operation of the code generator (col. 4, lines 40-47), or for providing a signal from the "0" input of the multiplexer for keeping the outputs of the shift registers unaltered (i.e. chip retard) (col. 4, lines 34-40).

19. It would have been obvious to one of ordinary skill in the art to supply a control signal to a multiplexer of a PN code generator for providing a chip retard as taught by Gruodis et al. in the PN code generator of Kelem in order to hold the contents of the shift registers in a fixed state without additional clock intervention (col. 4, lines 38-40).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

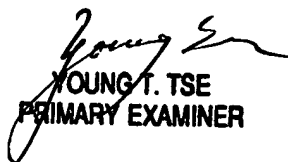
or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dl
5/28/04


YOUNG T. TSE
PRIMARY EXAMINER